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Customer Number

Patent
Case No.: 51474US010



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: OUDERKIRK, ANDREW J.

Application No.: 10/700137 Group Art Unit: 1773

Filed: November 3, 2003 Examiner: Unknown

Title: HIGH EFFICIENCY OPTICAL DEVICES

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING
I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

June 14, 2004

Date

Signed by: Heather M. Bundy

Dear Sir:

Pursuant to 37 CFR §§ 1.56, 1.97, and 1.98, enclosed is a completed Form PTO-1449, citing references submitted for consideration by the Examiner. Copies of any cited foreign patents, non-patent literature, and unpublished US application documents are enclosed. Pursuant to the waiver in the Pre-OG Notice, dated July 11, 2003, copies of US patents and published US patent applications are no longer required and are not enclosed. It is respectfully requested that the Examiner initial and return the enclosed Form PTO-1449 to indicate that each reference has been considered.

If a first Office Action on the merits has been mailed prior to the mailing date of this document, please charge the fee for consideration of an Information Disclosure Statement set forth in 37 CFR § 1.17(p), and if necessary, please charge any additional fees, or credit any overpayment to Deposit Account No. 13-3723.

Respectfully submitted,

14-June-2004
Date

By:

William D. Miller, Reg. No.: 37,988

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833

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U.S. Patent Documents

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		Number-Kind Code (if known)			
	A1	US- 2002/0008970 A1	1/2002	Hanson et al.	
	A2	US- RE 34,605	5/1994	Schrenk et al.	
	A3	US- 0,540,768	6/1895	Western	
	A4	US- 3,124,639	3/1964	Kahn	
	A5	US- 3,442,755	5/1969	Walters et al.	
	A6	US- 3,535,016	10/1970	Malifaud	
	A7	US- 3,565,985	2/1971	Schrenk et al.	
	A8	US- 3,610,729	10/1971	Rogers	
	A9	US- 3,637,455	1/1972	Pearson et al.	
	A10	US- 3,647,612	3/1972	Schrenk et al.	
	A11	US- 3,711,176	1/1973	Alfrey, Jr. et al.	
	A12	US- 3,740,112	6/1973	Lundgren	
	A13	US- 3,759,647	9/1973	Schrenk et al.	
	A14	US- 3,773,882	11/1973	Schrenk	
	A15	US- 3,801,429	4/1974	Schrenk et al.	
	A16	US- 3,860,036	1/1975	Newman, Jr.	
	A17	US- 4,025,688	5/1977	Nagy et al.	
	A18	US- 4,094,947	6/1978	Alfrey, Jr. et al.	
	A19	US- 4,268,127	5/1981	Oshima et al.	
	A20	US- 4,310,584	1/1982	Cooper et al.	
	A21	US- 4,315,258	2/1982	McKnight et al.	
	A22	US- 4,329,382	5/1982	Truskolaski et al.	
	A23	US- 4,446,305	5/1984	Rogers et al.	
	A24	US- 4,476,168	10/1984	Aoyama	
	A25	US- 4,500,173	2/1985	Leibowitz et al.	
	A26	US- 4,511,215	4/1985	Butler	
	A27	US- 4,515,441	5/1985	Wentz	
	A28	US- 4,515,837	5/1985	Cheng	

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		Number-Kind Code (if known)			
	A29	US- 4,520,189	5/1985	Rogers et al.	
	A30	US- 4,521,588	6/1985	Rogers et al.	
	A31	US- 4,525,413	6/1985	Rogers et al.	
	A32	US- 4,540,623	9/1985	Im et al.	
	A33	US- 4,688,897	8/1987	Grinberg et al.	
	A34	US- 4,720,426	1/1988	Englert et al.	
	A35	US- 4,791,540	12/1988	Dreyer, Jr. et al.	
	A36	US- 4,797,308	1/1989	Mattin	
	A37	US- 4,805,984	2/1989	Cobb, Jr.	
	A38	US- 4,813,765	3/1989	Negishi	
	A39	US- 4,937,134	6/1990	Schrenk et al.	
	A40	US- 5,089,318	2/1992	Shetty et al.	
	A41	US- 5,094,788	3/1992	Schrenk et al.	
	A42	US- 5,094,793	3/1992	Schrenk et al.	
	A43	US- 5,095,210	3/1992	Wheatley et al.	
	A44	US- 5,103,337	4/1992	Schrenk et al.	
	A45	US- 5,122,905	6/1992	Wheatley et al.	
	A46	US- 5,122,906	6/1992	Wheatley	
	A47	US- 5,126,880	6/1992	Wheatley et al.	
	A48	US- 5,149,578	9/1992	Wheatley et al.	
	A49	US- 5,188,760	2/1993	Hikmet et al.	
	A50	US- 5,202,074	4/1993	Schrenk et al.	
	A51	US- 5,202,950	4/1993	Arego et al.	
	A52	US- 5,211,878	5/1993	Reiffenrath et al.	
	A53	US- 5,217,794	6/1993	Schrenk	
	A54	US- 5,233,465	8/1993	Wheatley et al.	
	A55	US- 5,234,729	8/1993	Wheatley et al.	
	A56	US- 5,235,443	8/1993	Barnik et al.	

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	A57	US- 5,237,641	8/1993	Jacobson et al	
	A58	US- 5,269,995	12/1993	Ramanathan et al.	
	A59	US- 5,278,694	1/1994	Wheatley et al.	
	A60	US- 5,294,657	3/1994	Melendy et al.	
	A61	US- 5,303,322	4/1994	Winston et al.	
	A62	US- 5,316,703	5/1994	Schrenk	
	A63	US- 5,319,478	6/1994	Fünfschilling et al.	
	A64	US- 5,339,198	8/1994	Wheatley et al.	
	A65	US- 5,353,154	10/1994	Lutz et al.	
	A66	US- 5,360,659	11/1994	Arends et al.	
	A67	US- 5,389,324	2/1995	Lewis et al.	
	A68	US- 5,422,756	6/1995	Weber	
	A69	US- 5,424,119	6/1995	Phillips et al.	
	A70	US- 5,448,404	9/1995	Schrenk et al.	
	A71	US- 5,451,449	9/1995	Shetty et al.	
	A72	US- 5,468,523	11/1995	Huss et al.	
	A73	US- 5,481,445	1/1996	Sitzema et al.	
	A74	US- 5,486,884	1/1996	De Vaan	
	A75	US- 5,486,935	1/1996	Kalmanash	
	A76	US- 5,486,949	1/1996	Schrenk et al.	
	A77	US- 5,540,978	7/1996	Schrenk	
	A78	US- 5,550,660	8/1996	Yang	
	A79	US- 5,552,927	9/1996	Wheatley et al.	
	A80	US- 5,568,316	10/1996	Schrenk et al.	
	A81	US- 5,612,820	3/1997	Schrenk et al.	
	A82	US- 5,614,274	3/1997	Huss	
	A83	US- 5,629,055	5/1997	Revol et al.	
	A84	US- 5,686,979	11/1997	Weber et al.	

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Substitute for form 1449A/PTO (modified)

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		Number-Kind Code (if known)			
	A85	US- 5,699,188	12/1997	Gilbert et al.	
	A86	US- 5,721,603	2/1998	De Vaan et al.	
	A87	US- 5,744,534	4/1998	Ishihara et al.	
	A88	US- 5,751,388	5/1998	Larson	
	A89	US- 5,767,935	6/1998	Ueda et al.	
	A90	US- 5,770,306	6/1998	Suzuki et al.	
	A91	US- 5,783,120	7/1998	Onderkirk et al.	
	A92	US- 5,793,456	8/1998	Broer et al.	
	A93	US- 5,808,794	9/1998	Weber et al.	
	A94	US- 5,825,542	10/1998	Cobb, Jr. et al.	
	A95	US- 5,825,543	10/1998	Onderkirk et al.	
	A96	US- 5,882,774	3/1999	Jonza et al.	
	A97	US- 5,940,149	8/1999	Vanderwerf	
	A98	US- 5,962,114	10/1999	Jonza et al.	
	A99	US- 5,965,247	10/1999	Jonza et al.	
	A100	US- 6,080,467	6/2000	Weber et al.	
	A101	US- 6,082,876	7/2000	Hanson et al.	
	A102	US- 6,101,032	8/2000	Onderkirk	
	A103	US- 6,210,785	4/2001	Weber et al.	
	A104	US- 6,641,883	11/2003	Weber et al.	
	A105	US- 6,697,195	2/2004	Weber et al.	

Foreign Patent Documents

Exam. Init.*	Cite No.	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Translation (Check if yes)
		Ctry. Code	Number-KindCode (If known)				
	B1	CA	1,327,286	3/1994			
	B2	EP	0 062 751 A1	10/1982			
	B3	EP	0 404 463 A2	12/1990			
	B4	EP	0 426 636 A2	5/1991			

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		Ctry. Code	Number-KindCode (If known)				
	B5	EP	0 469 732 A2	2/1992			
	B6	EP	0 488 544 A1	6/1992			
	B7	EP	0 514 223 A1	11/1992			
	B8	EP	0 597 261 A1	5/1994			
	B9	EP	0 606 939 A1	7/1994			
	B10	GB	2 028 528 A	3/1980			
	B11	JP	3516976	4/2004			Machine Translation
	B12	JP	5-288910	11/1993			X
	B13	JP	6-11607	1/1994			X
	B14	JP	7-216328	8/1995			X
	B15	WO	91/09719	7/1991			
	B16	WO	94/10589	5/1994			
	B17	WO	94/11776	5/1994			
	B18	WO	95/17303	6/1995			
	B19	WO	95/17691	6/1995			
	B20	WO	95/17692	6/1995			
	B21	WO	95/17699	6/1995			
	B22	WO	95/27919	10/1995			
	B23	WO	96/19347	6/1996			
	B24	WO	96/31794	10/1996			
	B25	WO	97/01440	1/1997			
	B26	WO	97/01774	1/1997			
	B27	WO	97/32226	9/1997			
	B28	WO	99/36248	7/1999			
	B29	WO	99/36262	7/1999			

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Exam. Init.*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	C1	Alfrey et al., "Physical Optics of Iridescent Multilayered Plastic Films", Polymer Engineering and Science, Vol. 9, No. 6, Nov. 1969, pp. 400-404.
	C2	Boese et al., CHAIN ORIENTATION AND ANISOTROPHIES IN OPTICAL AND DIELECTRIC PROPERTIES IN THIN FILMS OF STIFF POLYIMIDES, Journal of Polymer Science: Part B: Polymer Physics, Vol. 30, pp. 1321-1327 (1992).
	C3	Hecht et al., OPTICS, Fourth Printing, Addison-Wesley Publishing Company, pp. 301-316, (1979).
	C4	Hodgkinson et al., EFFECTIVE PRINCIPAL REFRACTIVE INDICES AND COLUMN ANGLES FOR PERIODIC STACKS OF THIN BIREFRINGENT FILMS, Journal of the Optical Society of America, Vol. 10, No. 9, pp. 2065-2071, (1993).
	C5	Im, J. et al., COEXTRUDED MICROLAYER FILM AND SHEET, Journal of Plastic Film and Sheeting, Vol. 4, pp. 104-115, (1988).
	C6	Radford et al., REFLECTIVITY OF IRIDESCENT COEXTRUDED MULTILAYERED PLASTIC FILMS, "Polymer Engineering And Science", Vol. 13, No. 3, (1973), Dow Chemical Co., presented at American Chemical Society Symposium on "Coextruded Plastic Films, Fibers, and Composites", April 9-14, 1972.
	C7	Scheffer, Terry J., TWISTED NEMATIC DISPLAY WITH CHOLESTERIC REFLECTOR, Journal of Applied Physics, Vol. 8, pp. 1441-1448 (1975).
	C8	Schrenk et al., "Coextruded Elastomeric Optical Interference Films", SPE Annual Technical Conference, Atlanta, Georgia, pp. 1703-1707 (1988).
	C9	Schrenk et al., "Coextruded Multilayer Polymer Films and Sheet", Polymer Blends, Vol. 2, Chapter 15, pp. 129-165, Academic Press, Inc. (1978).
	C10	Schrenk et al., "Interfacial Flow Instability in Multilayer Coextrusion", Polymer Engineering and Science, Vol. 18, No. 8, p. 620-623 (June 1978).
	C11	Schrenk et al., NANOLAYER POLYMERIC OPTICAL FILMS, TAPPI Journal, pp. 169-174 (June 1992).
	C12	Schrenk et al., "Coextruded Infrared Reflecting Films", 7 th Annual Meeting Polymer Processing Society, Hamilton, Ontario, Canada, pp. 222-223 (April 1991).
	C13	Schrenk et al., "Coextruded Iridescent Film", TAPPI, Paper Synthetics Conference, Altanta, Georgia, pp. 141-145 (September 27-29, 1976).
	C14	Schrenk, W., "New Developments in Coextrusion", International Conference on Advances In Polymer Processing, New Orleans, Louisiana, (April 1991).
	C15	Weber et al., "Giant Birefringent Optics in Multilayer Polymer Mirrors", Science, Vol. 287, No. 5462, March 2000, pp. 2451-2456.
	C16	Zang et al., "Giant Anisotropies In The Dielectric Properties Of Quasi-Epitaxial Crystalline Organic Semiconductor Thin Films", Appl. Phys. Letter 59(7), August 1991, pp. 823-825.

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